WHAT IS CLAIMED IS:

1. An instrument for forming a centered bore in a femur in preparation for implantation of a femoral prosthesis, wherein the femur includes an intramedullary canal defined by an interior wall of cortical bone, the instrument comprising:

a handle joined to a proximal end of an elongated rod which is sized to be received within said canal; and

means provided at a distal end of the rod, and projecting outwardly from the rod, for engaging the interior wall of the cortical bone when said rod is inserted within the canal so as to center the rod relative to the wall.

2. An instrument as set forth in claim 1, wherein said wall engaging means comprises at least one pair of fins positioned on the rod at 180° displacement relative to one another.

3. An instrument as set forth in claim 2, wherein each fin has an outer surface which is semi-elliptical in shape.

4. An instrument as set forth in claim 1, 2 or 3, wherein said rod is provided with graduated markings along its length.

5. An instrument as set forth in claim 4, wherein said rod is rigid.

6. An instrument as set forth in claims 1, 2 or 3, wherein said handle is removably joined to the rod.

7. An instrument as set forth in claim 6, wherein said rod is provided with graduated markings along its length.

8. An instrument as set forth in claim 7, wherein said rod is rigid.

9. A method for forming a centered bore in a femur in preparation for implantation of a femoral prosthesis, wherein the femur includes an intramedullary canal defined by an anterior wall of cortical bone, the method comprising the steps of:

selecting an instrument having an elongated member sized to be received within the canal and having fins located at a distal end of said member and projecting outwardly therefrom;

inserting the elongated member into said canal until the fins engage the interior wall of cortical bone; and

withdrawing the elongated member from the canal.

10. A method as set forth in claim 9, further comprising the steps of:

after withdrawing the elongated member, rotating said member by 90°; and

repeating the inserting and withdrawing steps.

11. A method as set forth in claims 9 or 10, wherein during insertion of said member into the intramedullary canal, cancellous bone within the canal is compacted by the member along a wall of the bore and at a bottom of the bore.

12. A method for preparing a centered site for implantation of a prosthesis within

cancellous bone contained in a canal defined by an interior wall of cortical bone, the method comprising the steps of:

selecting an instrument having an elongated member sized to be received within the canal and having fins located at a distal end of said member and projecting outwardly therefrom;

inserting the elongated member into said canal until the fins engage the interior wall of cortical bone;

withdrawing the elongated member from the canal so as to leave a centered bore within the canal; and

inserting within the bore a compacting device to shape and size the cancellous bone surrounding the bore to prepare the site for receiving the prosthesis.

13. A method as set forth in claim 12, wherein a series of compacting devices of different sizes are sequentially inserted within the bore, each increasingly compacting the cancellous bone to form a dense wall defining the site for receiving the prosthesis.